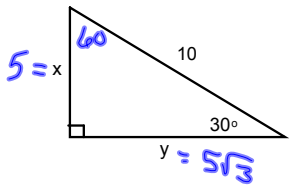
$$\tan A = \frac{\text{opposite}}{\text{adjacent}}$$

7.6/7.7 (Continued)

The Sine and Cosine Ratios

$\sin 30 = \frac{1}{2}$ $\frac{opp}{hyp}$

$\cos 60 = \frac{1}{2}$ $\frac{adj}{hyp}$



$$\sin = \frac{opposite}{hypotenuse}$$

$$\cos = \frac{adjacent}{hypotenuse}$$

$$\tan = \frac{opposite}{adjacent}$$

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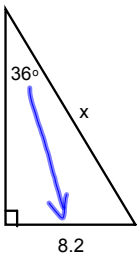
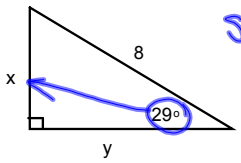


$\sin 36 = \frac{8.2}{x}$

$x = \frac{8.2}{\sin 36}$

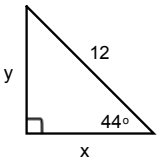
$x \approx 14.0$



$\sin 29 = \frac{x}{8}$

$x \approx 3.9$

$\cos 29 = \frac{y}{8}$ $y \approx 7.0$

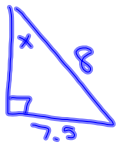


$\cos 44 = \frac{x}{12}$

$\sin 44 = \frac{y}{12}$

$x \approx 8.6$ $y \approx 8.3$

Find the vertex angle of an isosceles triangle with legs of length 8, and a base of length 15.



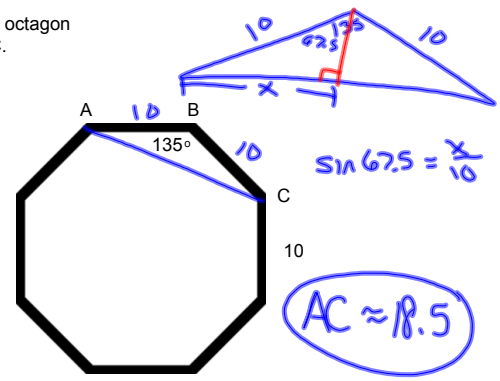
$\sin x = \frac{7.5}{8}$

$\sin^{-1}\left(\frac{7.5}{8}\right) = 69.6°$

$\times 2$

$139.2°$

Regular octagon
Find AC.

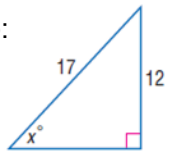


$\sin 67.5 = \frac{x}{10}$

$AC \approx 18.5$

Do:

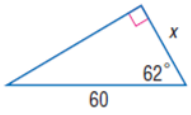
1.



$\sin X = \frac{12}{17}$

$X \approx 44.9°$

2.

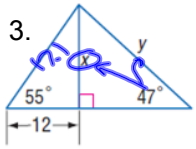


$\cos 62 = \frac{x}{60}$

$x \approx 28.2°$

Do together:

3.



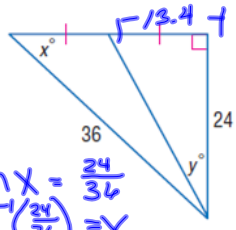
$\tan 55 = \frac{x}{12}$

$x \approx 17.1$

$\sin 47 = \frac{17.1}{y}$

$y \approx 23.4$

4.



$\sin X = \frac{24}{36}$

$\sin^{-1}\left(\frac{24}{36}\right) = X$

$41.8 \approx X$

$\tan y = \frac{13.4}{24}$

$\tan^{-1}\left(\frac{13.4}{24}\right) = y$

$29.2° \approx y$

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HW
p477-479
10-15, 30, 36a
p486
6-8, 14,15